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PROCEEDINGS OF THE 81ST ANNUAL MEETING

OF THE

AMERICAN STATISTICAL ASSOCIATION

CHICAGO, ILL., DECEMBER 29–31, 1919

PROGRAM

Monday, December 29.

8 p. m.

Presidential Address:

The Essentials of a Good Census: Joseph A. Hill.

Tuesday, December 30.

10 a. m.

The Improvement of Criminal Statistics in the United States: Louis N. Robinson, Probation Officer of the Municipal Court of Philadelphia.

Discussion by A. J. Todd, Labor Manager, B. Kuppenheimer & Co.

The Bureau of Criminal Records and Identification: Robert H. Gault, Editor of the American Institute of Criminal Law and Criminology.

Fighting Crime in Chicago: Henry Barrett Chamberlin, Operating Director of the Chicago Crime Commission.

2.30 p. m.

Round Table Discussion on the subject of a Continuous Census of Production: Led by M. C. Rorty, Statistician, American Telegraph and Telephone Company.

Discussion by Edmund E. Day, Warren M. Persons and Horace Secrist.

8 p. m.

Business Meeting: Election of Officers, Reports of Committees, etc.

Wednesday, December 31.

10 a. m.

Cost of Production Statistics: Lewis H. Haney, Director of the Bureau of Research and Publicity, Southern Wholesale Grocers' Association.

Discussion by M. C. Rorty, and Wesley C. Mitchell.

Progress in Railway Cost Accounting: Julius H. Parmelee, Statistician, Bureau of Railway Economics.

An International Price Index: Maurice L. Jacobson, Statistician, Federal Reserve Board.

2.30 p. m.

Scope of Statistical Research: John Cummings, Statistician, Federal Board for Vocational Education.

Standardization of Statistical Table Structure: Edmund E. Day, Harvard University.

Statistical Standards in Business Research: Horace Secrist, Northwestern University, Director of the Bureau of Business Research, Chicago.

Methods Employed in the Construction of Infant Rates of Mortality in the United States Life Tables: James W. Glover, University of Michigan.

Minutes of the Annual Business Meeting

Meeting called to order at 9 p. m., December 30, 1919, President Joseph A. Hill presiding.

Minutes of four regular meetings of the Board of Directors, held January 14th, March 28th, May 15th, and October 3d, 1919, were read and approved.

Reports were submitted as follows:

SECRETARY'S REPORT

The following report is submitted in respect to the condition of the Association:

Membership December, 1918				812
Additions during 1919:				
New members	200			
Corporate members	3			
Total		203		
Deductions during 1919		146		
Net gain during 1919				57
Membership December, 1919				869
Besides members we have:				
Subscribers, mostly libraries			242	
Domestic exchanges			40	
Foreign exchanges			71	
Total members, subscribers and exchanges				1,222
Above deductions during 1919 grouped as follows:				
Deaths reported, including four honorary members			20	
Resignations at first of the year			36	
Resignations during year			13	

Not found	27
Not found since January, 1919	6
Dropped for non-payment of dues, 1914–19	44
Total	146

The death of the following members has been reported during the year:

Honorary members:

Dr. Louis Gillaume, Berne, Switzerland
Andere Nicolai Kiaer, Christiania, Norway
Dr. Egisto Rossi, Ellis Island, New York
Dr. Gustav Sundbärg, Stockholm, Sweden

Regular members:

Hon. J. H. Barton
L. S. Blakey
John J. Brinkerhoff
Reginald L. Brown
William E. Butler
Andrew Carnegie
Edwin W. DeLeon
Victor M. Kime
Benno Loewy
Wm. A. McKenzie
Edward D. Page
Thomas E. Pickett
Carl Schloss
Alonzo W. Shunk
Alexander M. Wilson
John B. Worcester

Four numbers of the PUBLICATIONS have been issued, containing an aggregate of 331 pages. A handbook has been published as a supplement to the December issue, containing the names, addresses, and business connections of members.

Three special meetings of the Association have been held in New York City during the year, in March, June, and December. Attendance 50, 60, and 95 respectively.

A special study of 610 members has been made from the new membership blanks as directed by the board. The remaining 247 members did not fill out the blanks.

A further distribution was made according to whether the members had had formal statistical training, through instruction in courses in some institution, or training through practical experience only. Only 271 out of the total of 610, or about 44 per cent, described such formal training on the blanks. On the other hand, about three-fourths of the total, 450 members, were shown to be graduates of some college or university. The following summaries are presented:

* During the year 1919 an effort was made to clear the rolls of uncertain addresses, etc. A special letter was sent to all members who were delinquent in their dues for some part of 1914 to 1917, as well as 1918 and 1919. The 27 and the 6 designated as "not found" were dropped because their letters were returned unclaimed. The 44 mentioned as "dropped for non-payment of dues" were so designated because they did not reply in any way to the special letter sent to them requesting their coöperation and support. No one was dropped who was delinquent only for 1918 and 1919.

DISTRIBUTION OF 610 MEMBERS OF AMERICAN STATISTICAL ASSOCIATION ACCORDING TO OCCUPATIONAL CONNECTIONS AND ACTIVITY IN STATISTICAL WORK

Connections of members		*Number*	*Active**	*Not active*	*Per cent of total in larger groups*
1. Business:					
(1) Banks	21		10	11	
(2) Insurance	115		102	13	
(3) Manufacturing	52		39	13	
(4) Trade	28		20	8	
(5) Transportation and communication	25		19	6	
(6) Other business	41		28	13	
Total business		282	218	64	46
2. Colleges and Universities		98	62	36	16
3. Government bureaus (not functioning as a business)		138	122	16	23
4. Private social organizations		43	31	12	7
5. Miscellaneous					
(1) Legal	13		2	11	
(2) Medical	11			4	
(3) Other	25		7	18	
Total miscellaneous		49	16	33	8
Grand total		610	449	161	100

ANALYSIS OF THE ENTIRE PRESENT MEMBERSHIP NUMBERING 847, EXCLUSIVE OF CORPORATE AND HONORARY,† ACCORDING TO YEAR OF JOINING THE ASSOCIATION, GROUPED BY FIVE-YEAR PERIODS.

Year	*Number*	*Year*	*Number*
1919	200	1899–1903	13
1914–1918	278	1894–1898	23
1909–1913	194	1889–1893	53
1904–1908	56	Unknown	30

* By *active* is meant any work with statistical data such as that done by executives in planning, the chief statistician, research workers, graphic work and clerical work with statistical data. This group constituted about 74 per cent of the total.

† There are 19 honorary and 3 corporate members.

GEOGRAPHIC LOCATION OF THE ENTIRE MEMBERSHIP EXCLUSIVE OF HONORARY AND CORPORATE, BY LARGE CITIES AND BY STATES

By Cities

New York City	245	Baltimore	15	San Francisco	5
Washington	116	Pittsburgh	10	Cincinnati	4
*Boston	38	Detroit	9	Minneapolis	4
Chicago	36	Newark	8	St. Louis	3
Philadelphia	30	Cleveland	5	Milwaukee	2

By States†

Alabama	1	Massachusetts	89	South Carolina	1
California	11	Michigan	13	South Dakota	1
Colorado	3	Minnesota	9	Tennessee	3
Connecticut	27	Missouri	6	Texas	5
Delaware	1	Nebraska	4	Vermont	3
District of Columbia	117	New Hampshire	3	Virginia	5
Georgia	2	New Jersey	28	Washington	3
Illinois	51	New York	285	West Virginia	2
Indiana	6	North Carolina	3	Wisconsin	7
Iowa	6	North Dakota	1	Wyoming	1
Kansas	3	Ohio	21	Hawaii	3
Louisiana	1	Oklahoma	2	Philippines	1
Maine	2	Oregon	1	Canada	14
Maryland	21	Pennsylvania	56	Others	17
		Rhode Island	8		

Respectfully submitted,

ROBERT E. CHADDOCK,
Secretary.

Report of Secretary accepted and ordered printed in the proceedings.

REPORT OF TREASURER FOR 1919

RECEIPTS

Membership dues		$2,709.20	
Sales and subscriptions of QUARTERLY		907.93	
Memorial Volume:			
Sales to members	$274.60		
Sales through Macmillan Co.	388.74		
Total		663.34	
Dividends on B. & A. Stock		151.96	
Balance on hand, general fund		183.35	
Balance on hand, Memorial Volume funds		39.48	
Loan made February 1, 1919, Corn Exchange Bank (To pay old loan from Boston Bank)		1,500.00	
			$6,155.26

* Does not include Cambridge.

† Arizona, Arkansas, Florida, Idaho, Kentucky, Mississippi, Montana, Nevada, New Mexico, Utah, have no members.

EXPENDITURES

Printing:			
Printing QUARTERLY PUBLICATIONS:			
September, 1918, balance due	$192.36		
December, 1918	293.95		
March, 1919	385.90		
June, 1919	316.87		
September, 1919	611.28		
Total	$1,800.36		
Printing, balance in full, Memorial Volume	537.75		
Other printing expense, stationery, etc.	293.88		
Total printing expenses		$2,631.99	
Postage		304.41	
Salaries		843.30	
Loan paid in full to New England Trust Co., Boston, Mass., for Memorial Volume		1,500.00	
Interest on $1,500 loan during 1919		99.00	
Expenses, miscellaneous		117.09	
Balance forward		659.47	
			$6,155.26

ASSETS

17 shares Boston & Albany R. R. stock, deposited with Corn Exchange Bank as collateral for $1,500.00 loan, for the Memorial Volume.

About 675 copies of the Memorial Volume, valued at approximately $2,200.00.

REPORT ON MEMORIAL VOLUME FUND, 1919

RECEIPTS

Balance received from Boston banks	$ 39.48	
Sold 78 volumes to members at special rate	274.60	
Sales through Macmillan Co.	388.74	
		$702.82

EXPENDITURES

Balance due Rumford Press (in full for volume)	$527.75	
Printing circulars	10.00	
Express charges on volumes to Macmillan	9.96	
Interest on $1,500.00 loan during year	99.00	
Balance forward (Forms part of general balance of Association)	56.11	
		$702.82

PAYABLE

The Association has $1,500.00 loan on account of the Memorial Volume still outstanding.

ASSETS

The Association has about 675 copies of the Memorial Volume which should be valued at approximately $2,200.00.

ROBERT E. CHADDOCK,
Treasurer.

AUDITORS' REPORT

We have audited the accounts of the Treasurer of the American Statistical Association as of the close of business December 9, 1919, and find all disbursements properly accounted for by cancelled checks and vouchers. We have also verified the treasurer's record of receipts and disbursements, as shown by his books, with the cash balance on hand, as shown by the bank statement, and find the same in agreement.

As is customary, we have made no audit of accounts payable and receivable.

M. C. RORTY,
E. W. DARLING,
Auditing Committee.

The reports of the Treasurer and the Auditing Committee were accepted and ordered printed in the proceedings.

REPORTS OF COMMITTEES

Report of the Joint Census Advisory Committee of the American Statistical and American Economic Associations.

This report was accepted and ordered published in the proceedings, and will be found on page 76 of this issue.

REPORT OF THE COMMITTEE ON FEDERAL STATISTICS

W. A. Hathaway, chairman of the committee, presented the following report of progress:

Two resolutions or recommendations were referred to the Committee on Federal Statistics by the Board of Directors of the Association, with instructions to investigate and report. These two matters related to the establishment in Washington of a centralized statistical bureau, or some agency for coördinating the statistical work of the government.

The chairman of the committee forwarded these two resolutions to each member of the committee and asked for an individual expression of opinion on them, with suggestions for a method of procedure for work of the committee looking toward a final report on the two resolutions, and also regarding any other work to be taken up by the committee during the year. Replies were received from each member of the committee. The chairman

also consulted with two members of the committee in person and made some tentative inquiries and investigations in Washington relating to the subject. The results of the foregoing activities may be summarized briefly as follows:

(1) That actual centralization of governmental statistical work, *i. e.*, collection, compilation, and distribution, is probably neither desirable nor feasible.

(2) That better coördination of governmental statistical work is desirable and feasible to the end that duplication of work be minimized and the statistical product of the various governmental bureaus be vitalized and given wider distribution to the consuming public.

(3) Considerable difference of opinion exists as to how coördination can best be accomplished. Unanimity of opinion seems to exist for the establishment of a sort of central statistical clearing house composed of representatives from the different governmental statistical bureaus, various scientific societies and associations, and business and commercial associations, etc. But on the point of whether such a central agency should have only an advisory function or be given plenary powers, there is considerable difference of opinion.

In order to accomplish anything really worth while with regard to these plans, it will be necessary to have concerted action on the part of the various governmental bureaus and other interested agencies; and it even may entail legislative enactments. Conditions in Washington during the past year have not been favorable for undertaking any large or far-reaching program of this kind. It is the opinion of the chairman of this committee (and one in which I believe all the other members of the committee would concur) that the line of procedure which would promise the best results would be for the American Statistical and American Economic Associations to appoint a joint committee on this subject, such committee to organize and invite the active assistance and coöperation of representatives of the governmental statistical bureaus, the United States Chamber of Commerce, and other similar associations. After such organization was perfected, the whole question should be thoroughly studied and surveyed by means of sub-committees with a view to the preparation of a final comprehensive report that should embody the best thought on the subject, point out the evils and deficiencies of the present situation, and recommend remedial action.

That there is need for improvement in the statistical work of the government, no unbiased thinker can truthfully deny. The situation at present is probably worse than in pre-war times, since there are many stray ends of war activity existing. But the situation is not now, and never has been as bad as it has been pictured by various persons at different times; for example, a severe arraignment of the inefficiency and great duplication of governmental statistical work by one of our Congressmen in an article which recently appeared in the *Saturday Evening Post*. Almost all such attacks are unwarranted and are based either upon ignorance of the true situation, or upon the error of judging the whole by a few bad examples.

The report of progress was approved, and the suggestion of the appointment of a joint committee with the American Economic Association was referred to the board with power.

REPORT OF THE COMMITTEE ON BUSINESS STATISTICS

For the committee, M. C. Rorty, chairman, presented the following report:

The Committee on Business Statistics, during the past year, has made a special attempt to determine, through direct contacts with business and industrial concerns and trade associations, the directions in which it might work to best advantage. Very effective support has been secured through the efforts of Mr. Zenas W. Carter, secretary of the Material Handling Machinery Manufacturers' Association who has acted as chairman of a sub-committee on coöperation with trade associations.

The result of these contacts has been to indicate that the committee could do work of greatest immediate value to business and industry by concentrating its efforts on securing adequate monthly statistics of the manufacturing output of a limited number of key industries.

Work along these lines has made rapid progress during the last three or four months, and full coöperation has been secured between the committee and the Census Bureau, the Federal Reserve Board, the Chamber of Commerce of the United States, the National Association of Manufacturers, and the various industries and trade associations concerned.

A detailed statement of the committee's efforts and present program will be submitted in connection with the round-table discussion that is to take place during the present meeting.

Report approved.

REPORT OF THE COMMITTEE ON MEMBERSHIP

The chairman, Willard C. Brinton, presented the report as follows:

The records of the Secretary's office show a considerable increase in the number of paid-up members as compared with the last few years of the Association's history. As soon as a definite policy is established regarding classification of members who are in arrears regarding dues, it would seem desirable to have curves plotted so that the rate of the growth of the society can be accurately judged. Credit for the increase in membership during the year 1919 is chiefly due to the carefully planned work of the Secretary of the Association.

It is the feeling of the chairman of the Membership Committee personally that there are very considerable opportunities for increase in the membership from the various fields of business. Certainly the growth of interest in statistics has been more apparent in the commercial field than in the academic world during the last few years. As the society proves its usefulness, and as the field for statistics expands in the business world, it should

be comparatively easy to increase considerably the membership of the Association.

The final decision of the Board of Directors regarding the policies concerning corporate memberships was made so late in the year that it is not yet possible to determine just how many corporate memberships are likely to be obtained. The corporate members at present are: American Telephone & Telegraph Company; Westinghouse Electric & Manufacturing Co.; General Motors Corporation.

A number of other corporations have the matter under consideration.

It is felt that since the insurance companies depend so largely upon statistics in their regular business, they should be expected to take a considerable number of corporate memberships. It is hoped that some one familiar with insurance work will make an active campaign for obtaining insurance companies as corporate members.

Corporate members are most likely to be obtained through the personal solicitation of some member of our Association known to the corporation approached. It is suggested, therefore, that members of the Association who know officers of any corporation interested in statistical work, should volunteer to approach that corporation on the subject of taking out a corporate membership. The Membership Committee and the Secretary's office will be glad to furnish further information to assist in such a plan.

Report approved.

REPORT OF THE LIBRARY COMMITTEE

Edmund E. Day, chairman, for the Library Committee, made the following report and recommendations:

To understand the present position of the Library Committee of the Association, it is necessary to review briefly the history of the Association's library. Partly as a result of gifts of members and friends, partly as a result of exchanges of the QUARTERLY PUBLICATIONS, the Association had accumulated by 1898 a collection of about 5,000 books and pamphlets. The housing and care of the library was a burden which the Association, in straitened circumstances then as now, bore with increasing difficulty. Finally, in 1898 the Association arranged the transfer of its books to the Boston Public Library. The transfer was in effect an outright gift. Only nominal conditions were attached; namely, that "the purely statistical portion of the library should be kept together, and members of the Association should have free access to the shelves of the collection." Since there is no likelihood of a violation of these simple conditions, the Association has no effective claim upon the books formerly in its collection. With such additions as have been made, they constitute the Statistical Department of the Boston Public Library; they are no longer the library of the Statistical Association.

The Library Committee thus finds itself in an anomalous position. Not only has the Association no library, but there is no way in which the

Association can exercise any control over the books formerly in its possession. The Boston Public Library treats its Statistical Department as it deems best. Naturally, since the public call for statistical material is not as great as for other kinds of library service, the Statistical Department has received less financial support and is more poorly housed than many other departments of the Public Library. Against this situation the Library Committee can bring relatively little pressure to bear. The Library Committee can petition the authorities of the Boston Public Library for better treatment; it cannot bargain effectively for such treatment.

The only library resource of the Association lies in the exchange list of the QUARTERLY PUBLICATIONS. The exchanges of the PUBLICATIONS now go direct to Mr. Horace L. Wheeler, at the Boston Public Library. Mr. Wheeler serves simultaneously as librarian of the Association and as chief of the Statistical Department of the Public Library. Under Mr. Wheeler's supervision the exchanges of the PUBLICATIONS, after being catalogued, pass to the shelves of the Statistical Department. Practically no attempt is made to review the exchanges or to strengthen the exchange list. Thus this one remaining library resource is yielding practically no return to the Association.

If the Library Committee has any future at all, it lies in the exchange list of the PUBLICATIONS. The exchange list should be extended if possible. Important accessions obtained through exchanges of the QUARTERLY PUBLICATIONS should be promptly reviewed. In time, as more cordial relations are established between the Library Committee and the authorities of the Boston Public Library, the library authorities should be brought to see the value of the Association's contribution to the Statistical Department. Then, and not till then, will it be possible for the Library Committee to make a real contribution to the Association's resources.

In the belief that for the present the only work of the Library Committee lies in the exchange list of the QUARTERLY PUBLICATIONS, the committee makes the following recommendations:

1. That the exchanges of the QUARTERLY PUBLICATIONS be placed in charge of the Library Committee.

2. That the exchanges continue to be sent to the chief of the Statistical Department of the Boston Public Library, but be held by him subject to the direction of the chairman of the Library Committee.

3. That the librarian of the Association be also a member of the Library Committee, but not its chairman.

4. That the chairman of the Library Committee coöperate with the Board of Editors of the QUARTERLY PUBLICATIONS to revise and enlarge the exchange list and to secure satisfactory reviews of the most important volumes sent to the QUARTERLY PUBLICATIONS.

The Association approved this report, adopted the four recommendations as stated above, and ordered them to be carried out.

REPORT OF THE NOMINATING COMMITTEE

The report of the Nominating Committee, consisting of Wesley C. Mitchell, chairman, E. A. Goldenweiser and W. S. Rossiter, was presented for final action. The report previously submitted to the members by mail was supplemented by the nomination of William F. Ogburn for Editor. The Secretary was instructed to cast one ballot for the nominations as presented. The following officers were declared elected: President, George E. Roberts; Vice-Presidents, Carroll W. Doten, Lewis Meriam, Horace Secrist; Counsellors, Joseph A. Hill, Warren M. Persons, Walter F. Willcox; Secretary-Treasurer, Robert E. Chaddock; Librarian, Horace L. Wheeler; Editor, William F. Ogburn.

AMENDMENTS OF BY-LAWS

(1) The Association voted unanimously to amend by-law three, which concerns the organization of committees, to read, "The Board of Directors, as soon as practicable after their election, shall appoint two standing committees of three members each, namely, on finance and on the library; and shall appoint from time to time such other committees as in their judgment are deemed necessary for carrying on the activities of the Association."

(2) Further, by-law four was amended by unanimous vote to read, "five associate editors" instead of "four."

(3) The matter of the advisability of charging new members at the time of joining the Association an initiation fee was discussed and was not approved. However, it was voted by the Association, subject to the approval of the next annual meeting, to amend by-law two in such manner as to provide dues of five dollars for regular members and ten dollars for fellows, to become effective January 1, 1921. The discussion showed a desire to prove during the coming year that such a change is justified, by improving our QUARTERLY and extending our activity and membership. Thus, the Association will have a constantly more valuable offering to both old and new members. *Such a resolve the entire membership is called upon to support.*

The Association appropriated $600, as was provided last year, for securing assistance for the office of the Secretary-Treasurer.

The following matters were referred to the board with power:

(1) The Association voted authority to the board and its proper officers to act in the matter of the sale of stock of the B. & A. R. R. to the value of $1,000.00 for payment on the $1,500.00 loan carried for the Memorial Volume Fund, if the board deemed such sale desirable.

(2) The board was authorized to provide, either out of funds on hand or by raising special funds, for more adequate financial support of the PUBLICATIONS and for the expenses of editorial work.

RESOLUTIONS

A Special Committee on Criminal Statistics, appointed by President Hill in response to a resolution at the session on Tuesday morning, December 30th, consisting of Louis N. Robinson, chairman, and John Cummings, offered the following resolutions:

Resolved, That the American Statistical Association urge the Bureau of the Census to appoint at this time an expert in the field of criminal statistics to study the efforts which state and local officials of various states are now making to collect criminal statistics with the view to the development of a plan for the annual collection by the Bureau of the Census of criminal statistics for the United States as a whole.

Resolved, That the President of this Association be asked to appoint a committee to draft a statement to be sent to the Director of the Bureau of the Census setting forth the need for more adequate criminal statistics in the United States, and to work for the improvement and development of criminal statistics in the nation and in the individual states.

The resolutions were approved, and the President appointed Edith Abbott, Horatio M. Pollock, and Louis N. Robinson, chairman, to constitute the committee provided for in the resolutions.

The following resolutions were offered in appreciation of the services of the retiring editor of the PUBLICATIONS:

WHEREAS, the retiring editor, Mr. John Koren, has given a very great amount of time and energy to the arduous task of the preparation and editing of the Memorial Volume, "History of Statistics," as a service to the Association,

WHEREAS, he has edited the PUBLICATIONS for several years with entire devotion to the interests of the Association.

Resolved, that the American Statistical Association express its deep appreciation of the services rendered so faithfully and successfully, and directs that the Secretary publish these resolutions in the proceedings, and transmit a copy to Mr. Koren.

A report was presented by Mr. Allan H. Willett in explanation of the work of the Joint Commission on Reclassification of Salaries in Government Service. In response to his request, the Association voted to request the President, Mr. George E. Roberts, to communicate directly with the Hon. Andrieus A. Jones, chairman of the commission, setting forth the attitude of the Association in reference to the work of the commission.

ROBERT E. CHADDOCK,
Secretary.